

MATERIAL SAFETY
DATA SHEET3M
3M Center
St. Paul, Minnesota
55144-1000
(612) 733-1110

Duns No.: 00-617-3082

DIVISION: INDUSTRIAL CHEMICAL PRODUCTS DIVISION

TRADE NAME:

FC-143 FLUORAD Brand Fluorochemical Surfactant

3M ID NUMBER: 98-0211-0008-0 98-0211-0367-0 98-0211-0891-9 98-0211-1522-9
98-0211-5489-7 ZF-0002-0378-4

ISSUED: March 10, 1992

SUPERSEDES: March 03, 1992

DOCUMENT: 10-3808-2

1. INGREDIENT

C.A.S. NO.

PERCENT

AMMONIUM PERFLUOROALKYL CARBOXYLATE.....	3825-26-1	93.0	- 97.0
AMMONIUM PERFLUOROALKYL CARBOXYLATE.....	6130-43-4	1.0	- 4.0
AMMONIUM PERFLUOROALKYL CARBOXYLATE.....	21615-47-4	1.0	- 4.0
AMMONIUM PERFLUOROALKYL CARBOXYLATE.....	68259-11-0	0.1	- 2.0

2. PHYSICAL DATA

BOILING POINT:..... N/A
VAPOR PRESSURE:..... N/A
VAPOR DENSITY:..... N/A
EVAPORATION RATE:..... N/A
SOLUBILITY IN WATER:..... apprec.
SPECIFIC GRAVITY:..... 0.400 - 0.500 Water=1
(Bulk)
PERCENT VOLATILE:..... N/A
VOLATILE ORGANIC COMPOUNDS:.... N/D
VOC LESS H₂O & EXEMPT SOLVENTS: N/D
pH:..... ca. 5.00
(0.5% Aqueous)
VISCOSITY:..... N/D
Melting point:..... N/D

APPEARANCE AND ODOR:

Light colored powder; slight odor.

3. FIRE AND EXPLOSION HAZARD DATA

FLASH POINT:..... None
FLAMMABLE LIMITS - LEL:..... N/A
FLAMMABLE LIMITS - UEL:..... N/A
AUTOIGNITION TEMPERATURE:..... N/D

Abbreviations: N/D - Not Determined N/A - Not Applicable



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3. FIRE AND EXPLOSION HAZARD DATA (continued)

EXTINGUISHING MEDIA:

Water, Foam, CO2, Dry Chemical

SPECIAL FIRE FIGHTING PROCEDURES:

Full protective clothing including self-contained breathing apparatus, coat, pants, gloves, boots, and bands around legs, arms and waist should be provided. No skin surface should be exposed.

UNUSUAL FIRE AND EXPLOSION HAZARDS:

Heat of fire may release ammonia and HF.

NFPA HAZARD CODES: HEALTH: 3 FIRE: 0 REACTIVITY: 0

UNUSUAL REACTION HAZARD: none

4. REACTIVITY DATA

STABILITY: Stable

INCOMPATIBILITY - MATERIALS/CONDITIONS TO AVOID:

Not Applicable

HAZARDOUS POLYMERIZATION: Hazardous polymerization will not occur.

HAZARDOUS DECOMPOSITION PRODUCTS:

Thermal decomposition may produce toxic materials including HF.

5. ENVIRONMENTAL INFORMATION

SPILL RESPONSE:

Observe precautions from other sections. Use toxic dust mask. Use wet sweeping compound, or water to avoid dusting. Collect spilled material. Place in a closed container.

RECOMMENDED DISPOSAL:

Mix with flammable material and incinerate in an industrial or commercial incinerator. Combustion products will include HF. Discharge spent solutions to a wastewater treatment system. Reduce discharge rate if foaming occurs. Since regulations vary, consult applicable regulations or authorities before disposal. U.S. EPA Hazardous Waste No.: None

ENVIRONMENTAL DATA:

Chemical Oxygen Demand (COD): Nil (700 mg/Kg); 20-Day Biochemical Oxygen Demand (BOD20): Nil; 96-Hr. LC50, Bluegill Sunfish (*Lepomis macrochirus*): 569 mg/L; 96-Hr. LC50, Fathead Minnow (*Pimephales*)

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5. ENVIRONMENTAL INFORMATION (continued)

promelas): 766 mg/L; 48-Hr EC50, Daphnia magna: 632 mg/L; 14-Day EC50
(cell dry weight), Green Algae (Selenastrum capricornutum) 73 mg/L.

SARA HAZARD CLASS:

FIRE HAZARD: No PRESSURE: No REACTIVITY: No ACUTE: Yes CHRONIC: Yes

6. SUGGESTED FIRST AID

EYE CONTACT:

Immediately flush with plenty of water. Continue for 15 minutes.
Call a physician.

SKIN CONTACT:

Wash affected area with soap and water.

INHALATION:

If symptoms occur, remove person to fresh air. If symptoms continue,
call a physician.

IF SWALLOWED:

DO NOT INDUCE VOMITING. Give copious amounts of water. IMMEDIATELY
call a physician or Poison Control Center.

7. PRECAUTIONARY INFORMATION

EYE PROTECTION:

Safety Goggles

SKIN PROTECTION:

Rubber gloves, protective clothing.

RECOMMENDED VENTILATION:

Local exhaust ventilation should be used to control airborne dust.

RESPIRATORY PROTECTION:

Toxic dust or supplied air respirator if dust is not well controlled.

PREVENTION OF ACCIDENTAL INGESTION:

Not determined.

RECOMMENDED STORAGE:

Not determined.

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7. PRECAUTIONARY INFORMATION (continued)

FIRE AND EXPLOSION AVOIDANCE:

Not determined.

OTHER PRECAUTIONARY INFORMATION:

Use only in well ventilated areas with sufficient local exhaust ventilation to maintain airborne levels at recognized health and safety levels. Do not breathe dust. Do not get powder or airborne dust in eyes; wear personal eye protection. Do not get on skin; wear impervious gloves and protective clothing. Wash hands thoroughly after use before eating or drinking. Do not take internally. Launder contaminated clothing before re-use. NOTE: Was fed to albino rats for 2 years; no compound induced carcinogenicity was found in the study. There were statistically significant compound related benign testicular tumors. Based on current knowledge, the findings have no human health implications. ***PREVENT MOISTURE CONTAMINATION TO KEEP POWDER FREE FLOWING.***

EXPOSURE LIMITS

INGREDIENT	VALUE	UNIT	TYPE	AUTH	SKIN*
AMMONIUM PERFLUOROALKYL CARBOXYLATE.....	0.1	MG/M3	TWA	ACGIH	Y
AMMONIUM PERFLUOROALKYL CARBOXYLATE.....	0.1	MG/M3	TWA	3M	Y
AMMONIUM PERFLUOROALKYL CARBOXYLATE.....	0.1	MG/M3	TWA	3M	Y
AMMONIUM PERFLUOROALKYL CARBOXYLATE.....	0.1	MG/M3	TWA	3M	Y
AMMONIUM PERFLUOROALKYL CARBOXYLATE.....	0.1	MG/M3	TWA	3M	Y
AMMONIUM PERFLUOROALKYL CARBOXYLATE.....	0.1	MG/M3	TWA	3M	Y

* SKIN NOTATION: Listed substances indicated with 'Y' under SKIN refer to the potential contribution to the overall exposure by the cutaneous route including mucous membrane and eye, either by airborne or, more particularly, by direct contact with the substance. Vehicles can alter skin absorption.

SOURCE OF EXPOSURE LIMIT DATA:

- ACGIH: American Conference of Governmental Industrial Hygienists
- 3M: 3M Recommended Exposure Guidelines

8. HEALTH HAZARD DATA

EYE CONTACT:

Product can be irritating to the eyes upon direct contact. Animal studies indicate product is moderately irritating to the eyes. Airborne product may cause eye injury consisting of corneal

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8. HEALTH HAZARD DATA (continued)

opacity.

SKIN CONTACT:

May be absorbed through the skin on single limited contact. Slightly toxic when absorbed through the skin on single limited contact. Non-irritating to the skin on single limited contact.

INHALATION:

May cause respiratory system irritation from inhalation of dust. Can be considered moderately toxic by inhalation on a single exposure; a median lethal concentration for a 4-hour exposure in the albino rat is 980 milligrams per cubic meter. Repeated inhalation exposure produced liver changes and elevated blood organofluoride levels in rats.

IF SWALLOWED:

Considered moderately toxic from a single oral exposure. The acute oral LD50 (rat) is 540 milligrams per kilogram of body weight. Not teratogenic (rats or rabbits). See precautions for results of 2 year study.

SECTION CHANGE DATES

PRECAUTIONARY INFO. SECTION CHANGED SINCE March 03, 1992 ISSUE

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The information on this Data Sheet represents our current data and best opinion as to the proper use and handling of this product under normal conditions. Any use of the product which is not in conformance with this Data Sheet or which involves using the product in combination with any other product or any other process is the responsibility of the user.